

What is claimed is:

1. A semiconductor device production method for producing a semiconductor device by forming an impurity region in a front surface of a silicon carbide semiconductor substrate, the method comprising the steps of:

bringing a heating member of carbon into contact with the front surface of the silicon carbide semiconductor substrate selectively ion-implanted with an impurity element; and

heat-treating the silicon carbide semiconductor substrate with the heating member in contact with the front surface of the silicon carbide semiconductor substrate.

2. A semiconductor device production method as set forth in claim 1, further comprising the step of holding the silicon carbide semiconductor substrate by a susceptor of carbon with a rear surface of the substrate in contact with the susceptor, wherein

the heating member contacting step is the step of bringing the heating member into contact with the front surface of the silicon carbide semiconductor substrate held by the susceptor, and

the heat treating step is the step of causing the susceptor and the heating member to generate heat through high frequency induction heating for heat

treatment.

3. A semiconductor device production method as set forth in claim 1, wherein the heating member contacting step is the step of holding the silicon carbide semiconductor substrate by a susceptor of carbon serving as the heating member with the front surface of the substrate in contact with the susceptor.

4. A semiconductor device production method as set forth in claim 3, wherein the heat treating step is the step of causing the susceptor to generate heat through high frequency induction heating for heat treatment.

5. A semiconductor device production method as set forth in claim 3, wherein the heat treating step is the step of causing a heater built in the susceptor to generate heat for heat treatment.